## Author Index


Abraham, D. 301
Anderson, R. 331
Armen, G. 183
Baer, D. 439
Bagus, P. 69
Baker, J. 487
Banna, M. 1
Barnes, M. 487
Barton, J. 37
Beall, C. 397
Bernstorff, S. 373
Bodeur, S. 103
Bradshaw, A. 527
Bressler, P. 263
Bringans, R. 599
Browning, R. 315, 321
Cao, R. 581
Carbone, C. 701
Carlson, T. 397
Carroll, T. 471
Casarin, M. 197
Casarin, M. 459
Cederbaum, L. 75, 211
Chen, N. 291
Cockett, M. 487, 529
Colle, M. 197
Coolbaugh, D. 69
Cooper, J. 397
Craig, B. 183
Crenshaw, M. 1
Dake, L. 439
Dehmer, J. 339
Dehmer, P. 339
de Lange, C. 363
de Miguel, J. 263
Domotor, G. 149
Donath, M. 283
Dose, V. 283
Dudde, R. 373
Dyke, J. 487, 529
Eberhardt, W. 373
Ellis, A. 487, 529
Fadley, C. 689
Feher, M. 487, 529
Feldhaus, J. 527
Ferris, K. 439
Freund, H. 149
Friedman, D. 689
Friedrich, D. 439
Granozzi, G. 197
Grazhulis, V. 565
Grimm, F. 397
Gudat, W. 701
Hallmeier, I. 459
Hansen, J. 407
Hanson, D. 221
Harada, Y. 167
Hayashi, H. 167
Hedin, L. 91
Heinen, W. 701
Heinonen, M. 555
Helms, C. 315, 321
Hemmerich, I. 149
Hermsmeier, B. 275
Hernandez-Calderon, I. 613
Hinch, B. 673
Hitchcock, A. 103, 653, 661
Hochst, H. 613, 623

Hollebone, B. 661
Holloway, J. 1
Hopster, H. 301
Ikeda, T. 229
Illing, G. 149
Janowitz, C. 591
Ji, D. 471
Johnson, P. 249
Kachel, T. 701
Kimura, K. 383
Kipp, L. 591
Kirschner, J. 263
Koch, A. 527
Koch, E. 373
Koeckhoven, S. 363
Koenders, B. 363
Koeppel, H. 211
Kosugi, N. 103
Kotani, A. 229
Kowalczyk, S. 69
Kuhlenbeck, H. 149
Landolt, M. 287, 315, 321
Lapiano-Smith, D. 221
Larkins, F. 115, 183
Lee, E. 487
Lee, K. 221
Lee, Y. 513
Leiro, J. 555
Liegener, C. 149
Lindau, I. 581
Lindle, D. 397
Lock, A. 673
Ma, C. 221
Macklin, W. 331
Madden, H. 673
Manzke, R. 591
Masuda, S. 167
Meisel, A. 459
Meyer, M. 407
Michaud, M. 237
Miranda, R. 263
Miyano, K. 581
Morris, A. 487
Mullins, D. 397
Nelson, A. 623
Niu, B. 513
O'Halloran, M. 339
Ogasawara, H. 229
Ohrendorf, E. 211
Okada, K. 229
Okuyama, K. 383
Olmstead, M. 599
Orlowski, B. 591
Pacchioni, G. 69
Pappas, D. 301
Parmigiani, F. 69
Plazibat, I. 383
Poppa, H. 315, 321
Porwol, T. 149
Pratt, S. 339
Randall, K. 527
Ranganathaiah, C. 331
Rau, C. 291
Reinhold, J. 459
Reutt-Robey, J. 513
Richards, J. 183
Richter, M. 407
Robins, J. 331
Rocco, M. 373
Ruhl, E. 653

Saethre, L. 417
Sanche, L. 237
Scheller, M. 75
Schmidbauer, M. 527
Schneider, C. 263
Schuster, P. 263
Sgamellotti, A. 211
Shirley, D. 513
Siegbahn K, 11
Siggel, M. 1, 417
Smith, N. 55
Sonntag, B. 407
Spicer, W. 581
Szargan, R. 459
Takahashi, M. 383
Tarantelli, F. 211
Taylor, J. 397
Thomas, T. 417
Thomas, T. 471
Toennies, J. 673
Tomkins, F. 339
Tyliszczak, T. 661
Uhlig, I. 459
VanZandt, T. 315, 321
Vayrynen, I. 555
von Niessen, W. 149, 173
von Raven, E. 407
Wang, L. 513
Wardermann, W. 173
Waters, K. 291
Weigold, E. 629
Weikert, H. 75
Wen, A. 653, 661
White, G. 673
Williams, J. 331
Wright, T. 529
Wu, K. 221
Yates, A. 331
Yates, B. 397
Zamanpour, H. 487

## Subject Index


$A_3B_5$
  Ag on, 565
  Auger, LEED, & UPS, 565
  cleaved surfs., 565

ab initio calcs., 439, 443, 451, 478
  mol. orbit. theory, 69
  theory, 1, 6, 8
  bond angle & length for $SF_4$, 103
  carbonyl bribged dimers, 203
  core-ionization, 419, 436
  for ethylene, 211, 218
  of absorbates, 151, 165
  of Cl-containing compounds, 419
  of unstable mols., 487, 491

ab initio Green's fn.
  for diamino-s-tetrazine, 173
  low energy lines, 173, 175

absorbates
  IPES, 55, 62

acetylene
  ARPES of, 527

acidity
  gas phase, 2, 6

AES
  $Fe_{80}B_{20}$, Ni(110), Tb(0001)/W(110), 291

Ag
  deposition at low temps., 565
  on $A_3B_5$ cleaved surfs., 565
  surface coverage, 265

Ag/InP(110)
  interface states, 583
  PES, 581

Al
  bind. eners. of surf. atoms, 69

algebraic diagrammatic constr. (ADC), 75
  for ethylene, 211

alpha-$Sn_{1-x}Ge_x$ alloys
  by MBE, 613, 620
  electronic struct., 613, 620
  on GaSb, CdTe, Ge(100), 613, 620

Anderson impurity model
  rare earth oxides, 229

Ar
  autoionization of & spectator model, 407
  resonant photoemission, 397

aromatic azabenzene, 373

ARPEFS, 42

ARPES
  of acetylene, 527
  of CdTe(110), 591
  using undulator radiation, 527

ARUPS
  of cobalt on Cu, 263
  spin polarized, 273

$As_2$ & $As_4$
  UVPES, 513, 521

Auger, 249, 251
  $CH_3CN$ vs. $CH_3NC$, 115, 128
  de-excitation, 167
  from mag. ordered solids, 287
  HF & $CF_4$, 115, 142, 143
  molecular spectra, 115
  multicenter continuum fns., 120
  of Ag on $A_3B_5$, 565
  of azabenzene, 373, 377
  of Ca & CaO, 555, 563
  of carbonyl sulfide (OCS), 471
  of Cl-containing compounds, 419
  of core hole excited states, 221, 227
  of ethylene, 211, 218
  of molecular $O_2$, 221, 227
  of phosphazenes, 439, 456
  resonant, 397
  resonant & autoionization procss., 124
  resonant theoretical calcs., 402
  spin polarized (SPAES), 287
  theoretical interpretation, 115

autoionization
  multiphoton studies, 339, 344
  of Ar, K, & Ca, 407
  of core hole excited states, 221, 226, 227
  of molecular $O_2$, 221, 227

autoionization spect., 149, 164

Bell-Squires thm., 96

bound-state resonances
  bond angle & length for $SF_4$, 103

Ca
  autoionization of & spectator model, 407

Ca & CaO
  Auger, 555, 563

$CaF_2$
  on Si(111), 599, 604

carbonyl bribged dimers
  multicentered interactions, 197, 209

carbonyl sulfide (OCS), 471

CdTe
  alpha-$Sn_{1-x}Ge_x$ on, 613, 620

CdTe(110)
  surface states, 591, 597

Ce+O
  chemielectron spect., 541, 551

$CH_2F$
  PES of, 487, 490

$CH_3CHF$
  PES of, 487, 492

chemielectron spect.
  of metal oxidation, 529
  of $U+O_2$ & $U+N_2O$, 487, 505

chemisorption, magnetism &, 249

Co
  spin polarized photoelectron spectroscpy, 701

cobalt(fcc) on Cu(100)
  PES, 263, 273

core electron excited states
  dynamic screening, 373

core-ionization
  energy, 2, 6
  ab initio calcs., 419, 436
  ener. & chem. props., 417, 421
  for C in monohalogenated ethenes, 421
  of Cl-containing compounds, 419

core level binding energies
  for Al & Cu surfs., 69
  molec. orbit. theory of, 69
  of PMDA, 69

crystal field theory
  for $SF_4$, 103

Cu
  bind. ener. of surf. atoms, 69

Cu(001)
  IPES, 55

cyanogen (NCCN), 75

damped one-electron fns., 91, 101

de-excitation electron spectra (DES)
  of azabenzene, 373, 377, 380

diamino-s-tetrazine
  PES of, 173

di-isocyanogen (CNNC), 75

discrete variation quantum mech. calcs., 197, 201, 203, 209

discrete-variational Xalpha (DVXalpha), 460, 462

ECS of $Fe_{80}B_{20}$, 291

ECS of Ni(110), 291

ECS of Tb(0001)/W(110), 291

EELFS, 661

EELS, 661
  inner shell (ISEELS), by x-ray (NEXAFS), 653
  of organometalic compounds, 653

EELS, of Ni, 301

EELS, spin-polarized, 301

electron irradiation
  epitaxial growth enhanced by, 599

of substrates, 599

electron momentum spectroscopy (EMS), 629
PES comparison, 645
theory, 634

electron scattering, 91, 96, 101
by HREEL, 238

electron spectroscopy 11, 13, 29
of absorbates, 149
via autoionization, 149

electronegativities
of halogens, 424

epitaxial
semi.-insul. heterointerface form., 599, 610

ESCA, 11

ethylene
Auger, 211, 218

EXAFS, 91, 101, 661

EXELFS, 661

Fe
on Au(100), 289
surf. mag., 289
spin polarized photoelectron spectroscpy, 701

Fe-4%Si xtals.
SEMPA of, 321

$Fe_{80}B_{20}$
ECS, AES, RHEED, LEED, STM, ISR, 291

Fermi level pinning, 581

ferromagnetics
spin polarized photoelectrons from, 263, 267

filled tetrahedral semis., 623, 628

Franck-Condon, 480

Franck-Condon transitions, 23

GaAs
of Ag on $A_3B_5$, 577

gas phase acidities
of organic acids, 427

GaSb
alpha-$Sn_{1-x}Ge_x$ on, 613, 620

Gd films
surf. mag., 289

Ge
on $CaF_2$ on Si(111), 599, 608
on $SrF_2$ on Si(111), 599

Ge(100)
alpha-$Sn_{1-x}Ge_x$ on, 613, 620

graphite
MAES of, 167
surface wave fn., 167

Green's fn.
outer valence (OVGF), 75, 88
of absorbates, 151
van Hove diagonal, 91

GW-approx., 91, 92, 98

Hartree-Fock
ionization of CN dimers, 75, 88
Ca & CaO, 556
for ethylene, 213

Hartree-Fock fn., Relaxed (RHF), 183

Hartree-Fock-Slater Xalpha calcs., 198

He-atom scattering
from Xe adsorbed on Al(332), 673, 687

heterointerface formation
$CaF_2$ on Si(111), 599, 604
Ge on $CaF_2$ on Si(111), 599, 608
semi.-insul., 599, 610
$SrF_2$ on Si(111), 599, 607

holography & photoelectron diffract., 37, 38, 39, 51

Hucke Theory (EHT), extended, 459, 460, 462

InAs
of Ag on $A_3B_5$, 572

inelastic electron scattering, 661

inelastic electron scattering (NEELFS)
of organometalic compounds, 653

InP
interface w/ Ag, 581

InSb
of Ag on $A_3B_5$, 566

interface states
Ag/InP(110), 583
metal/semiconductor, 581

ionization of CN dimers, 75

IPES
of absorbates, 55, 62
of Cu(001), 55
of CO, 249, 257

ISEELS
of organometalic compounds, 653

isocyanogen (CNCN), 75

ISR
of $Fe_{80}B_{20}$, Ni(110), Tb(0001)/W(110), 291

K
autoionization of & spectator model, 407

$KMnF_3$
spin-polarized photoelectron diffract., 275

Koopman's thm.
ionization of CN dimers, 79, 88

Kr
resonant photoemission, 397

$La;O_2$
chemielectron spect., 542, 548, 551

lanthanides
oxidation reacts., 529

Larsson charge trans.459, 466

laser radiation
tunable VUV pulsed, 383, 394

laser Raman meas., 453

laser, GaAlAs, 332

LEED, 16
fourier trans. of, 50
of Ag on $A_3Bi_5$, 565
of $Fe_{80}B_{20}$, Ni(110), Tb(0001)/W(110), 291

lithium
photoionization crossections, 183

LiZnAs
electronic structure, 623, 628
synchrotron rad. photoemission, 623, 628

LiZnP
electronic structure, 623, 628
synchrotron rad. photoemission, 623, 628

low energy lines
photoelectron spectra, 173

Madelung potential, 422

magnetic domain wall structs.
by SEMPA, 321, 326
imaging, 321

magnetic,order
of $KMnF_3$, MnO, 275

magnetic structure
of epitaxial Fe and Co, 701

magnetically ordered solids
Auger, 287

magnetism
at surfaces & of films, 287
surface, 291

magnetism & chemisorption, 249

Markovnikov addition, 432

mass resolved ion spectra
of lanthanides, 529

MBE
alpha-$Sn_{1-x}Ge_x$ on GaSb, CdTe, Ge(100), 613, 620

metal induced gap states (MIGS), 585

metal oxidation
chemielectron spect., 529

metal/semiconductor
interface states, 581

Metastable Atom Elect. Spect. (MAES)
of graphite, 167

Miedema electronegativity, 587

MnO
spin-polarized photoelectron diffract., 275

molecular beams
for UVPES, 513, 525
high temp., 513, 525
supersonic, 513, 525

molecular Cl
autoionization & dissociation, 363

molecular orbital theory
for Al & Cu surfs., 69
for photoelectron spect., 69
for pyromellitic acid dianhydride (PMDA), 69

Mott scattering
large angle asymmetric, 331, 335, 337

multiphoton studies
of mol. autoionization, 339

multiplett splitting
of $KMnF_3$, MnO, 276

multiphoton ionization (MPI)
resonance enhanced (REMPI), 363

$N_2$
2-Pi-g shape resonance, 237
in rare gas solids, 237

NEXAFS, 20

Ni
SPEELS of, 301
ferromagnetism, 283
magnetic band, 283

Ni(110)
ECS, AES, RHEED, LEED, STM, ISR, 291

nitrophenol
meta-, 1, 6
para-, 1, 6

Nowotny-Juza semis., 623, 628

$O_2$
Auger, 221, 227
autoionization, 221, 227

optical potentials, 91, 98

organometalic compounds
ISEELS & NEELFS, 653

parity-unfavored transitions
in Auger, 397, 406

PbSe
UVPES, 513, 519

Penning ionization (PI), 168

PES, 92
3d core, 229
angle-resolved, 527
angular resolved (ARPES), 591
angular resolved (ARPES), 613, 616, 620
EMS comparison, 645
high temp. & high resol., 513, 525
molecular orbital theory, 69
multiphoton ionization (MPI), 383, 394
of absorbates, 149
of Ar, 409
of $As_2$, $Asi_4$, PbSe, $ZnC!_2$, 513, 519, 521, 525
of CdTe(110), 591
of $CH_2F$ & $CH_3CHF$, 487
of $CS_2$, 173
of highly excited mol. states, 339
of interface formation, 601
of molecular Cl, 363
of p-quinodimethane, 173
of triplet pyrazine, 393
of unstable mols., 487
rare earth oxides, 229
Si & Ge on $CaF_2$ & $SrF_2$, 601
UV of physisorbed Xe (PAX), 673, 687
vibrationally resolved, 513
w/ supersonic molecular beams, 513, 525

PES, UV (UVPES), 197, 209, 513, 525
gas phase, 198

PES, UV (UVPES), 197, 209, 513, 525
gas phase, 198

phenol, 1, 6

phosphazenes, ligands, 439

photoelectron
spectrometer, 4

photoelectron diffract. azmuthal (APD)
fourier trans. of, 49

photoelectron diffraction
of $KMnF_3$, MnO, 275
spin polarized, 275
final state effects, 689, 698
spherical-wave calc., 689
fourier trans. of, 37, 39, 42, 51

photoelectron spectra
low energy lines, 173
molecular orbital theory for, 69

photoemission, 91, 101, 249, 251
Cobalt on Cu, 263
from GaAs, 331
from LiZnAs & LiZnP, 623, 628
from Xe adsorbed on Al(332), 673
laser induced, 331
single xtal. & epitaxial films, 263
spin- & angle-resolved, 263, 273
spin-resolved inverse (IPES), 283
synchrotron radiation, 623, 628
UV (UPS), 623, 628
UV Inverse (IPES), 55
of azabenzene, 373

photoionization crossections
of lithium, 183

Pockels cell, 332

pyromellitic acid dianhydride (PMDA)
MO theory & core level B.E.s, 69

rare earth oxides
PES, 229

Rehr-Albers formalism, 690, 698

REMPI, 18, 29
of highly excited mol. states, 339

REMPI-PES, 364
of mol. hydrogen, 339, 360

resonant photoemission
of Ar, Kr, & Xe, 397
parity-unfavored trans. in, 397, 406

RHEED
of $Fe_{80}B_{20}$, Ni(110), Tb(0001)/W(110), 291

Rontgen, 11

scattering matrix formalism
for PD, 689

Schottky barrier formation
InP-based devices, 581, 588

SEM
W/ spin polarized analysis (SEMPA), 315, 319

SEMPA
of mag. domain wall structs., 321, 329

SEMPA instrument, 315, 319

$SF_4$, inner-shell excitation spectra, 103

SIMS, 16

SiS
PES of, 487, 496

SPAES
from mag. ordered solids, 287

spectator model for Ar, K, Ca, 407, 411, 413

SPEELS of Ni, 301

SPEES, angle- & energy-resolved, 291

spin polarized analysis
SEM w/, 315

spin polarized electrons
capture & emission, 291

spin-polarized EELS of Ni, 301

spin-polarized electrons
source & detector, 331, 337

spin-polarized photoelectros spectroscopy
of Fe and Co or Au(100), 701

$SrF_2$
on Si(111), 599, 607

STM
of $Fe_{80}B_{20}$, Ni(110), Tb(0001)/W(110), 291

Stoner excitation, 301

superconductors (high-Tc)
IPES, 58

surface magnetism
SEMPA of, 321

surface states
CdTe(110), 591, 597

synchrotron radiation
circularly polarized, 263, 273

Tb
surf. mag., 289

Tb(0001)/W(110)
ECS, AES, RHEED, LEED, STM, ISR, 291

TDS, 16

$U+O_2$ & $U+N_2O$
chemielectron spect. of, 487

undulator radiation
ARPES using, 527

unstable molecules
PES of, 487

UPS
from Xe adsorbed on Al(332), 674, 687
of Ag on $A_3B_5$, 565
of graphite, 168

vibrational fine struct., 23

Wagner chem. state plots, 456

Walsh diagrams
for $SF_4$, 103

x-ray
excitation, 1, 4

x-ray spect., 11

Xe
adsorbed on Al(332), 673, 687
He-atom scattering, PES, XPS, UPS, 673, 687
resonant photoemission, 397

XFS (extended fine structure), 661

XPS
3d in rare earth oxides, 229
for studies of gnd. state props., 459
from Xe adsorbed on Al(332), 674
of Ni compounds, 459
of phosphazenes, 439, 443

$ZnCl_2$
UVPES, 513, 523